

## CLAIMS:

1. A data communication node forwarding inbound packets,  
5 the node comprising:

an access controller receiving an inbound packet and  
classifying the packet, the access controller determining whether  
the packet is to be admitted into the node or not based on  
congestion status data determined from the classification  
10 information; and

sub  
A1  
100658710 020602  
205020  
15 a switching controller coupled to the access controller, the  
switching controller receiving the admitted inbound packet from  
the access controller for further classifying the packet, the  
switching controller determining whether the packet is to be  
forwarded to a destination address or not based on additional  
congestion status data determined from additional classification  
information.

20 2. The data communication node of claim 1, wherein the  
access controller is a media access controller.

25 3. The data communication node of claim 1, wherein the  
classification information includes a priority associated with  
the inbound packet.

30 4. The data communication node of claim 3, wherein the  
access controller gives precedence in admitting packets  
associated with a first priority over packets associated with a  
second priority.

5 5. The data communication node of claim 1, wherein the access controller includes a buffer storing admitted inbound packets.

10 6. The data communication node of claim 5, wherein the congestion status data includes a buffer utilization level, the access controller admitting the inbound packet if the utilization level is lower than a predetermined threshold level.

15 7. The data communication node of claim 5, wherein the congestion status data includes a buffer utilization level, the access controller discarding the inbound packet if the utilization level is higher than a predetermined threshold level.

20 8. The data communication node of claim 1, wherein the access controller discards the inbound packet based on a discard probability that varies based on the classification information.

25 9. An access controller in a data communication node comprising:

an input receiving an inbound packet;  
a classification engine coupled to the input classifying the inbound packet;  
a buffer storing admitted inbound packets; and  
a disposition engine coupled to the classification engine and the buffer, the disposition engine receiving the classification information and determining whether the inbound packet is to be admitted or not based on a utilization level of the buffer determined from the classification information, the

disposition engine delivering the inbound packet to a switching controller if the packet is admitted.

5

10. The access controller of claim 9, wherein the classification information includes a priority associated with the inbound packet.

10

11. The access controller of claim 10, wherein the disposition engine gives precedence in admitting packets associated with a first priority over packets associated with a second priority.

15

12. The access controller of claim 9, wherein the disposition engine admits the inbound packet if the utilization level of the buffer is lower than a predetermined threshold level.

20

13. The access controller of claim 9, wherein the disposition engine discards the inbound packet if the utilization level of the buffer is higher than a predetermined threshold level.

25

14. The access controller of claim 9, wherein the disposition engine discards the inbound packet based on a discard probability that varies based on the classification information.

30

15. A method for packet traffic management in a data communication node including an access controller and a switching controller, the method comprising:

at the access controller:

35

receiving an inbound packet;  
classifying the inbound packet;  
5 determining congestion status data from the  
classification information;  
admitting the inbound packet or not based on the  
congestion status data; and  
delivering the inbound packet to the switching  
10 controller if the packet is admitted; and  
at the switching controller, determining whether the  
admitted packet is to be forwarded to a destination address.

15 16. The method of claim 15, wherein the access controller  
is a media access controller.

20 17. The method of claim 15, wherein the classification  
information includes a priority associated with the inbound  
packet.

25 18. The method of claim 17, wherein the admitting the  
inbound packet further comprises giving precedence to packets  
associated with a first priority over packets associated with a  
second priority.

30 19. The method of claim 17 further comprising storing the  
inbound packet in a packet buffer associated with the access  
controller if the packet is admitted.

35 20. The method of claim 19, wherein the determining of the  
congestion status data comprises determining a utilization level  
of the packet buffer.

21. The method of claim 20, wherein the admitting of the  
5 inbound packet comprises admitting the inbound packet if the  
utilization level of the packet buffer is lower than a  
predetermined threshold level.

22. The method of claim 20 further comprising discarding  
10 the inbound packet if the utilization level of the packet buffer  
is higher than a predetermined threshold level.

23. The method of claim 20 further comprising discarding  
15 the inbound packet based on a discard probability that varies  
based on the classification information.

209020-01-020502  
10068710-020502

25

30

35